in Europe. This topical corticosteroid is absorbed only partially, giving it a significant advantage over Decadron® in regard to adrenal suppression and systemic side effects at the recommended dosage. Beclomethasone is not presently available for nasal use in the United States, but is available for treatment of asthma (Vanceril®). Other poorly absorbed topical corticosteroids (flunisolide, betamethasone-17, valerate, triamcinolone) are being studied and are expected to be available in the future.

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Inpatient Corticosteroid Therapy for Asthma

SYSTEMIC CORTICOSTEROIDS have a well recognized place in the treatment of patients with asthma in hospital. However, due to adverse side effects their judicious use is warranted. In addition to hydration and correction of blood gas abnormalities and acid-base imbalance, theophylline and sympathomimetics are the primary drugs used in the management of bronchial asthma in hospital. Corticosteroid therapy is indicated in patients who in spite of receiving adequate doses of theophylline intravenously are not responding clinically; in patients receiving long-term oral-aerosol steroids at the time of admission or within 12 to 18 months before admission to hospital, and in patients with asthma receiving long-term oral-aerosol steroids who are admitted for surgical operation or treatment of infection, injury or any other stress.

The rationale behind steroid use is the anti-inflammatory action by which steroids maintain the integrity of the microcirculation and of the cell membrane and stabilize lysosomes. However, these effects may not be relevant to their mode of action in status asthmaticus.

The choice of synthetic steroid is based on its duration of action, which in turn determines the degree of suppression of the hypothalamic-pituitary-adrenal axis. Hydrocortisone or methylprednisolone are preferred, due to their short duration of action. In order to achieve an optimal response, steroids should be given intravenously in doses which exceed the basic secretory rate as determined by plasma cortisol levels. Peak pulmonary function changes after one dose of intravenously given hydrocortisone are seen in 5 hours and decline in 12 hours. Therefore beneficial effects are not expected clinically until 5 to 8 hours from the time of administration. Maximal changes in blood gases are observed when plasma 11-hydroxycorticosteroid levels of 100 to 150 μg per ml are reached. This is achieved by a 5 to 6 mg dose of intravenously given hydrocortisone per kg of body weight.

In practice, Bierman and associates recommend intravenous hydrocortisone at the dose of 7 mg per kg of body weight initially followed by 7 mg per kg every 24 hours, in divided doses. Equivalent doses of intravenously given methylprednisolone could be used instead. If steroids are used for a brief time (three to five days), they can be stopped abruptly. However, longer use often necessitates gradual withdrawal.

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Bronchial Provocation Tests in Patients With Asthma or Hay Fever

IT HAS BEEN KNOWN for some time that the lungs of patients with asthma during a symptom free period will respond to a bronchoconstricting drug, such as methacholine, in doses which fail to cause constriction in nonasthmatic persons. Recent investigation has shown that patients with hay fever who have never had asthma also respond by bronchoconstriction to inhalation challenges with doses of methacholine too small to affect normal subjects. The site of bronchoconstriction, however, differs in the two types of allergy. Whereas both patients with hay fever and those with asthma show a greater sensitivity to the drug in the large central portions of the airway (trachea and bronchi) than normal subjects, patients with asthma appear to have more sensitive peripheral airways than either those with hay fever or normal subjects.

Hay fever may be a serious disorder in its own